

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-26 are pending in the application, with claims 1, 10, 17, and 23 being the independent claims. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Drawings

The Examiner requested that new drawings be filed, as the drawings submitted upon filing the application were informal. Applicants therefore file formal drawings herewith in a Submission of Drawings.

Rejections under 35 U.S.C. § 102

Claims 1-2 and 17-18 stand rejected under 35 U.S.C. 102(a) as being allegedly anticipated by U.S. Pat. Appl. No. 2003/0007377 to Otaka ("Otaka"). Applicants respectfully traverse.

Regarding claim 1, Otaka neither teaches nor suggests, among other things, a plurality of submixers, "each submixer in the plurality of submixers having a polarity that prevents cancellation of a signal output from each other submixer in the plurality of submixers," as recited in amended claims 1 and 17. As there is no discussion in Otaka regarding polarity of the submixers, Applicants respectfully submit that claims 1 and 17

are patentable over Otaka. Further, claims 2 and 18 depend from claims 1 and 17, respectively, and are thus patentable over Otaka for the same reasons discussed with respect to claims 1 and 17. Reconsideration and withdrawal of the rejections of claims 1-2 and 17-18 are respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 3, 19, and 23 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Otaka. Applicants respectfully traverse.

Claim 3 depends indirectly from claim 1. Claim 19 depends indirectly from claim 17. Claims 3 and 19 are thus patentable over Otaka for at least the reasons discussed with respect to claims 1 and 17. Further, as discussed above, Otaka neither teaches nor suggests a plurality of submixers, "each submixer in the plurality of submixers having a polarity that prevents cancellation of a signal output from each other submixer in the plurality of submixers," as recited in amended claim 23.

Additionally, Applicants disagree with the Examiner's assertions that it would be obvious to modify Otaka so that a phase difference between any two time-adjacent LO waveforms is approximately equal to a phase difference between any other two time-adjacent waveforms. Otaka requires that the phases of the two LO signals used be directly opposite to each other (e.g., 0° and 90°) (*see*, Otaka, paras. 0031 and 0092). Even if an additional LO signal could be added to the system of Otaka, such that there could be "other two time-adjacent waveforms," the phase of such a signal would necessarily be equal to an existing signal, and would thus not anticipate claims 3, 19, and 23. Further, if the phases of the LO signals were altered so that they were separated by

equal phase differences, the alteration would inhibit the ability of Otaka's system to effectively cancel out the harmonics. Therefore, such a modification would render Otaka unsatisfactory for its intended purpose (See M.P.E.P § 2143.01(V) and (VI)), and cannot be used by the Examiner to form a prima facie case of obviousness. Reconsideration and withdrawal of the rejections of claims 3, 19, and 23 are respectfully requested.

Claims 4-7, 9-13, 15-16, 20-22, and 24-26 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Otaka in view of U.S. Pat. Appl. No. 2005/0206416 to Kizer ("Kizer"). Applicants respectfully traverse.

Claims 4-7 and 9 depend directly or indirectly from claim 1. Claims 11-13 and 15-16 depend directly or indirectly from claim 10. Claims 20-22 depend directly or indirectly from claim 17. Claims 24-26 depend directly from claim 23. As discussed with respect to claim 1, Otaka neither teaches nor suggests a plurality of submixers, "each submixer in the plurality of submixers having a polarity that prevents cancellation of a signal output from each other submixer in the plurality of submixers," as recited in each of amended claims 1, 10, 17, and 23. The addition of Kizer does not cure this deficiency, as Kizer also does not teach or suggest at least this feature. For these reasons, and further in view of their own respective features, claims 4-7, 9-13, 15-16, 20-22, and 24-26 are patentable over the combination of Otaka and Kizer. Reconsideration and withdrawal of the rejection of claims 4-7, 9-13, 15-16, 20-22, and 24-26 are respectfully requested.

Claims 8 and 14 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Otaka in view of Kizer and further in view of U.S. Pat. Appl. No. 2005/0186930 to Rofougaran et al. ("Rofougaran"). Applicants respectfully traverse.

Claim 8 depends indirectly from claim 1. Claim 14 depends directly from claim 10. Claims 8 and 14 are thus patentable over the combination of Otaka and Kizer, as the combination neither teaches nor suggests a plurality of submixers, "each submixer in the plurality of submixers having a polarity that prevents cancellation of a signal output from each other submixer in the plurality of submixers," as recited in each of amended claims 1 and 10. The addition of Rofougaran does not cure this deficiency, as Rofougaran does not teach or suggest at least this feature. For these reasons, and further in view of their own respective features, claims 8 and 14 are patentable over the combination of Otaka, Kizer, and Rofougaran. Reconsideration and withdrawal of the rejection of claims 8 and 14 are respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Michelle K. Holoubek
Attorney for Applicants
Registration No. 54,179

Date: 11/21/06

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

578930_1.DOC